

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



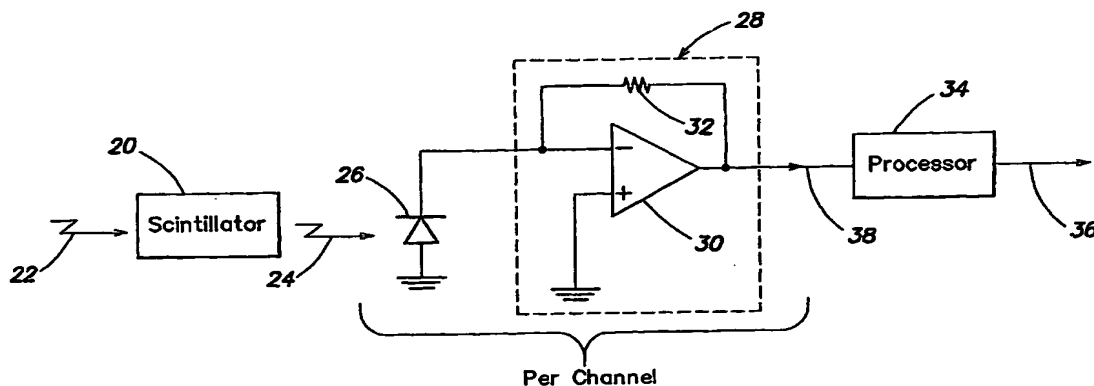
(43) International Publication Date
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number
WO 2004/095060 A2

- (51) International Patent Classification⁷: **G01T**
- (21) International Application Number:
PCT/US2004/012110
- (22) International Filing Date: 20 April 2004 (20.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/464,843 23 April 2003 (23.04.2003) US
- (71) Applicant (for all designated States except US): **L-3 COMMUNICATIONS SECURITY AND DETECTION SYSTEMS CORPORATION [US/US];** 10E Commerce Way, Woburn, MA 01801 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **EILBERT, Richard, F. [US/US];** 116 Lincoln Road, Lincoln, MA 01773 (US). **SIEVING, Alan, R. [US/US];** 48 Harris Street, Waltham, MA 02452-6105 (US).
- (74) Agent: **WALSH, Edmund, J.;** Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: X-RAY IMAGING TECHNIQUE



(57) Abstract: A security system for detecting contraband such as explosives. The system has a source of radiation and a detector array. A detector array is made of many small detectors, each with a fast response time. The fast response time allows individual radiation photon interactions with each detector to be counted. By counting the number of interactions in an interval of time, the amount of radiation reaching the detector can be measured. The magnitude of the response from the detector to each radiation interaction allows measurement of the energy level of the photons interacting with the detector. Such a system provides significant flexibility in analyzing data collected from items under inspection. For example, objects such as contraband can be identified within the item under inspection by processing the data to accurately determine both the density and type of material.